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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/839,952	04/19/2001	Naoko Iwami	36992.00072	4508

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SQUIRE, SANDERS & DEMPSEY L.L.P
600 HANSEN WAY
PALO ALTO, CA 94304-1043

EXAMINER

NGUYEN, TRONG NHAN P

ART UNIT	PAPER NUMBER
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2152

DATE MAILED: 06/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/839,952

Applicant(s)

IWAMI, NAOKO

Examiner

Jack P. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This action is in response to Applicant's amendment filed on 12/27/04. Claims 7, 15, 23 and 31 are canceled. Claims 1-6, 8-14, 16-22, 24-30 and 32-34 are being examined.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Vos, 6,192,454 (De Vos hereafter) and Black, 6,842,784 (Black hereafter).

As per claims 1, 10, 18, 26, and 34 De Vos discloses a storage apparatus comprising: a gateway, server, switch (1, fig. 1b; ATM switch (1, fig. 1b) functions as a switch/gateway/server that relays data manipulation/storage requests from devices across the network), having a processor, a memory, and at least one port operative to connect to an external network (col. 2, lines 50-55; processor, memory, output port, etc. are components of the gateway switch); a plurality of devices that store information, each of said devices further comprising at least one volume (col. 5, lines 38-41; storage medium units (20, fig. 1a) comprise of plurality of storage volumes (21, fig. 1a) to store data); and an internal network connecting gateway/switch/server and at least one of said plurality of devices that store information (col. 2, lines 50-55). Still, De Vos does

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not explicitly disclose the methods of receiving data packet for storing, extracting virtual destination address from data packet, performing address translation between the virtual destination address with the corresponding address retrieved from memory, and performing similar translating function for the virtual volume identifier with the volume identifier retrieved from translation table. However, in a related art to the claimed invention, Black discloses an enterprise storage network 'ESN' (89, fig. 8) that comprises of plurality of storage nodes (82, fig. 8) connected together via a network switch (84, fig. 8; network switch connects the storage nodes together; it also controls data routing/transfers between the storage devices) over a fibre channel network; the storage nodes being accessed and manipulated (e.g., read/write, etc.) by users or hosts connected together via the switching nodes (81, fig. 8; switching nodes are devices such as gateways/routers/or switches that control the data routing between the host devices and the storage devices) (col.15, lines 56-60; col. 16, lines 1-7, 19-22, 25-34). Black further discloses the concept of 'virtual' or 'logical' storage volume; i.e., the host or user's view of the storage device may not correspond to the actual physical storage system (hence the word 'virtual' or 'logical' is disclosed) (col. 3, lines 29-34); assigning enterprise logical (or virtual) volume identifier 'ELVID' to an associated logical volume (this identification number is used to identify the virtual volumes of the system); enterprise storage management controller 'ESMC' (124, fig. 12) stores the ELVID in its database tables and performs mapping (address) translations between the ELVID and its actual physical storage address locations of where the data is stored independently from the host or user device; ELVID identifier is unique and independent of where the

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actual physical location at which the data is stored, i.e., the actual storage location is only known by the ESMC not the host or user device (col. 20, lines 27-33, 50-54; col. 22, lines 11-15, 19-25, 41-46).

When the ESMC (124, fig. 14; col. 20, lines 27-33, 50-54; ESMC can be a server that performs address translations received from the host or user computer into actual storage locations employed by the storage devices as explained above) receives a data request from the host (122a, fig. 14), it extracts from the request the virtual address of where the host wishes to store the data; the console then translates the virtual address into the corresponding destination address of the storage device (e.g., the IP address of the storage device); in addition, the console also extracts from the data packet for the 'virtual' volume identifier (or ELVID) and translates the ELVID into volume identifier (real physical locations of the data storage devices) in order to store the data packet (the both the ELVID and the physical locations of where the data is stored is independent and unknown to the user or host as indicated above (col. 22, lines 11-15, 19-25, 41-46; col. 23, lines 53-58; col. 23, line 66 – col. 24, line 3; col. 24, lines 11-13; col. 25, lines 51-57; col. 25, lines 64 - col. 26, line 4). Hence, it would have been obvious to one of ordinary skill in the art to modify and combine the teachings of De Vos and Black to use a separate device to perform the address and volume translations between 'virtual' and 'real' address identifiers in order to conceal the identities of the 'real' addresses and locations of where the data is actually stored from unauthorized access.

As per claims 2, 17, 25 and 33, Black discloses said gateway authenticates a source of said data packet based upon a user address in said data packet (col. 11, lines

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50-52; server authenticates users for accessing the system).

As per claims 3, 14, 22, and 30, De Vos discloses the external network comprises a virtual private network (VPN), and wherein said gateway performs VPN processing for said data packet (Col. 2, Lines 62-66; col. 4, lines 5-10; the gateway switch sets up a 'virtual private path' (or VPN) to send data packets from the source to the recipient across the networks.)

As per claims 4, 11, 19, and 27, Black discloses external network uses a first protocol and said internal network uses a second protocol, and wherein said gateway translates said data packet from said first protocol to said second protocol (col. 8, lines 24-26; col. 16, line 66 – col. 17, line 3; col. 20, lines 4-5; internal network between storage devices may use SCSI, fibre or ESCON protocols to move data among storage devices while external network uses TCP/IP protocols to communicate with external internet devices; the server can translate and route data between the two networks).

As per claims 5, 6, 20, and 28, Black discloses the first protocol comprises at least one of fibre channel and second protocol comprises IP protocol (col. 8, lines 24-26; col. 16, line 66 – col. 17, line 3; col. 20, lines 4-5).

Claims 8, 16, 24 and 32 are rejected by similar rationale as claim 1, but in reverse address translation order.

As per claim 9, Black discloses virtual destination address and said destination address are stored in a table (Col. 24, lines 11-13).

Response to Arguments

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack P. Nguyen whose telephone number is (571) 272-3945. The examiner can normally be reached on M-F 8:30-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenton Burgess can be reached on (571) 272-3949. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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GLENTON B. BURGESS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100